1 Annual Processes (AP)

There are two processes that are executed on an annual basis. These two processes do not have any correlation, one to the other. A brief overview of each is presented below.

Process #	Process Name	Brief Overview
AP 1	Fiscal Year Database Archiving	The Decision Support System (DSS) DataScan database consists of 30 months of data based on payment or process date. To allow future retrieval of historical data, MEDSTAT stores off-line (archives) all of the tables in the DataScan DB2 database immediately following the completion of the December monthly update. This process describes the steps necessary for unloading the relevant data as an archive.
AP 2	PMW Database Build	The PMW database is rebuilt each year after the completion of each DataScan monthly update that includes June data. This process describes the necessary build steps.

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1. Fiscal Year Database Archiving

1.1 Overview

The DataScan DB2 database consists of 30 months of data based on payment or process date. To allow future retrieval of historical data, MEDSTAT stores off-line (archives) all of the tables in the DataScan DB2 database immediately following the completion of the December monthly update. The primary emphasis of the once per year storage process is to capture the oldest fiscal year (July 1 –June 30) before any part of it "rolls off" and out of the rolling 30 month production database (See figure 1). From a date of service perspective, the fiscal year is most "complete" after the December update – there are at least 18 months of runoff for the oldest fiscal year after the December update. This dataset may ultimately become the basis for a single year historical database accessed by DSS users interested in services rendered in a period preceding the current 30-month service window of the existing production database.

1.2 Purpose

This process is conducted once each year in order to retain input data for the 3 one-year archive database enhancement resulting from the MIS/DSS contract renewal.

1.3 Scope

This process covers the extraction and archival of data from the existing DSS tables.

1.4 Responsibility and Enforcement

The Operations manager and team are responsible for the execution and oversight of this process.

1.5 General Considerations

The archive process occurs once each year when the oldest Fiscal year of data is just about to rolled off of the database.

1.6 Skill Requirements

This process requires the ability to execute jobs against the DSS and an understanding of the data model.

1.7 Entry Criteria

The oldest fiscal year of data must be at the point where the last month is ready to be rolled of the database.

1.8 Procedure Steps

The December DB2 tables are unloaded onto tapes and can be reloaded back into identical table structures at some point in the future. This reload process would still need to be defined and is not a part of this process. MEDSTAT uses unload utilities provided by either the database manufacturer (IBM) or alternative third party products (e.g., platinum FastUnload) to accomplish this task.

1.8.1 Impacted Tables

The Medi-Cal tables impacted by the fiscal year archival process include:

- BACKPROV
- CAPITATION
- CASE
- DRUG
- ELIG
- ELIG_PART
- EPIS
- IP_CLAIM
- IP_PAID
- MGD_CARE
- OP_CLAIM1
- OP_PAID
- POPS
- PROVIDER
- VITAL

1.8.2 Method for Archival of Tables

To unload data from DB2 tables or an image copy of the table, MEDSTAT executed the PLATINUM Fast Unload utility in 2000, however, future versions of DB2 may be used for the same purpose. By executing a job with in-stream instructions, the process of unloading data is straightforward.

JCL is created to execute the PLATINUM utility to unload the impacted table.

The essential syntax required by Platinum to perform this function include:

- Unload file DD Name - e.g., SYSREC
- Input file DD Name - e.g., SYSIMAG
- Unload file format - Unload format (IBM DNSTIAUL format)
- Input file format - Image copy format (used 1st time) or unload format (used

for all future unloads)

- Number of IO buffers - e.g., 60
- SortSize - e.g., 4M
- Select clause that results in unload – e.g., Select * from HDHMSP2.MSPA00B_Elig (this results in output file generated in column order of table row-by-row).

Note: Retention periods for the tapes involved in this process are set as unlimited and do not allow the tapes to be lost due to expiration. Please note that the entire table is archived, even though end-users will likely only need access to the first 12 months of data within the service and eligibility tables.

1.9 Exit Criteria

Completion of this processed is achieved by the successful creation of archive files for all of the affected tables above.

1.10 Forms and Subject Examples

none

1.11 Reference Material

none

1.12 Policy History

Established/Revision Date	Established/Revised By	Change Description
8/18/00	John Mulcahy	Policy/Process Established
3/16/01	John Mulcahy	Updated to reflect newer process and process document template.

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1. PMW Database Build

1.1 Overview

The MEDSTAT Performance Measurement Workstation (PMW) is designed to support comprehensive reporting of the National Committee on Quality Assurance's (NCQA's) HEDIS® reporting measurement set. PMW is used by the California Department of Health Services Medi-Cal program as a component of the Management Information System and Decision Support System (the MIS/DSS).

The process to build a PMW database starts with the completion of the DataScan database. Data is extracted from the DB2 tables, loaded onto the PMW NT Server, processed through a data validation step and then loaded into a SQL Server database where each HEDIS measure is calculated. Validation of each step in the PMW database build is documented in the PMW System Test plan.

There is not a PMW Update process, as PMW is rebuilt for each calendar year.

1.2 Purpose

The purpose of this document is to guide the build of each calendar year PMW database.

1.3 Scope

This document will be used by the project team member responsible for building the PMW SQL Server database.

1.4 Responsibility and Enforcement

The project team member assigned to the PMW database build is responsible for each step of the PMW build process.

1.5 General Considerations

The PMW Technical Reference Guide outlines each step of the PMW build process in great detail and should be used as a step by step instruction manual.

There are two servers dedicated to PMW activity. The PMW1 server is used for the PMW database builds. The PMW2 server houses the production PMW database for interactive use. This allows a PMW database to be built while users are accessing the current production database.

1.6 Skill Requirements

A wide range of skills are required to build a PMW database:

1. Knowledge of the Medi-Cal DataScan database is needed for the customization of the PMW software which may be needed for each calendar year build
2. Basic knowledge of COBOL, SAS and JCL
3. Ability to maneuver on the mainframe in TSO
4. Understanding of Microsoft NT Server
5. Understanding of Microsoft SQL Server and the components of a SQL Server database

1.7 Entry Criteria

Before a PMW database can be built for a calendar-reporting year, there must be 6 months of data lag in the DataScan database tables to ensure completeness. For example, the DataScan tables must be updated through June 2000 before the PMW database for calendar year 1999 is created.

1.8 Procedure Steps

There are several steps required to complete a successful PMW database build. Each one of these steps will be addressed separately:

1. Install, configure and build the MS SQL Server database components
2. Extract relevant data from the DataScan database
3. Load the input data onto the PMW NT Server
4. Preprocess the input data
5. Build the PMW measures
6. Backup the PMW database
7. Validate the PMW database
8. Transfer the new database to the Production Server

1.8.1 Install, configure and build the MS SQL Server database components

MS SQL Server must be installed and configured appropriately before a PMW database can be built. The individual components of the database are set up before the process of building the individual measures begins.

The PMW Technical Reference Guide outlines each step of this procedure in great detail and should be used as a step by step instruction manual. Section 1, *Install and Configure Server Software.*

1.8.2 Extract relevant data from the DataScan database

The PMW database is built from data that is extracted from the DB2 Tables used in DataScan. Included in the PMW software are standard DataScan extract jobs for each relevant DataScan table. Each extract job must be customized according to the specifications required by The Department of Health Services, as outlined in the Data Enhancement Functional Specifications for PMW. The project team member responsible for the PMW build must run reports that show expected counts for each of the subsystems that data is extracted from. These reports can either be run in DataScan or on the mainframe with SPUFI. These reports count the number of rows that should be used in the PMW build and can be found in the PMW System Test Plan.

The PMW Technical Reference Guide outlines each step of this procedure in great detail and should be used as a step by step instruction manual. Section E, *DataScan Extract Process for MVS.*

1.8.3 Load the input data onto the PMW NT Server

After the relevant data is extracted from the DataScan database, it is loaded on the PMW build server. When each extract job completes, the project team member assigned to the PMW build views the output on the mainframe in IOF. The total number of rows extracted must be balanced back to the previously run expected counts reports and documented in the PMW System Test Plan. After each extract is validated, the data is ready to be loaded onto the PMW build server.

Each 3490 tape is mounted on the NT server's tape device. The software on the server used to read the tapes is *InterTape*. Once *InterTape* is open, several settings must be configured in order to read the data properly.

1. Under the *Autoloader* menu, select *options*
2. Check the box next to *Smart Detect* and make sure that *Set the Order of Tape Volumes* is unchecked
3. Select OK
4. Under the *Autoloader* menu, select *Find all Cartridges* and make sure that the number of tapes detected is the same as the number of tapes that was mounted
5. Under the *Read Tapes* menu, select *options*
6. Make sure that *Use User Translation Table Number* is checked and the number *5* is typed in the box. Also make sure that *Truncate Trailing Spaces In Records* and *Place a CR LF After Each Record* are both selected
7. Select OK
8. Press the *Smart Read* button
9. A dialog box appears and the user is promoted for the location where the data will be saved on the server
10. Enter the desired location and press OK
11. The total number of records processed by InterTape is displayed after each file is read. This number must balance back to the number of records extracted from DataScan

Repeat steps 9,10 and 11 until all files are read and saved on the server.

1.8.4 Preprocess the input data

The input data will be "prepared" by executing PMW's Data File Preparation Script. The Data File Preparation Script will perform the following:

1. Read the input files
2. Sort the input files
3. "Distill" the sorted files and will write the "prepped" files to the designated directory. This "Distill" process will filter bad data and write the rejected row to a *.bad file, calculate values such as Age (PMW recalculates Age) and insert default values in place of nulls
4. The input and output record counts of the "Distill" process are validated against the original extracted data counts

The PMW Technical Reference Guide outlines each step of this procedure in great detail and should be used as a step by step instruction manual. Section 5, *Preprocess Input Files*.

1.8.5 Build the PMW measures

The individual PMW measures will be built by executing the Database Build Script which will perform the following steps:

1. Creates the SQL Server database tables
2. Loads the static data
3. Loads the prepped flat files which result from execution of the Input File Preprocessing Process
4. Indexes the data
5. Loads the PMW measures stored procedures
6. Loads the Trace and Audit procedures
7. Sets the control parameters
8. Dumps the transaction log
9. Builds the PMW measures
10. Provides an audit trail of build activities via log files

The PMW Technical Reference Guide outlines each step of this procedure in great detail and should be used as a step by step instruction manual. Section 6, *Build PMW Measures.*

NOTE: during a database build, users cannot access the database on the build server (PMW1). Access to the current production database is not affected (PMW2).

1.8.6 Backup the PMW database

Once the PMW database build is complete, the master and PMW databases are backed up. To perform a backup of a database, perform the following:

1. Open Enterprise Manager
2. Select the SQL Server Group where the SQL Server used in the build is registered
3. Select databases
4. Right click on the database to be backed up
5. Scroll to *All tasks, backup database*
6. Under the *Destination* options, click on *Add*
7. Click on *Backup Device*
8. Select the backup device to be used
9. If one is not created, select *New Backup Device*
10. Name the backup device and select the desired location
11. Select *OK* three times

1.8.7 Validate the PMW database

After the PMW database build is complete, SQL queries are executed to ensure the inclusion of all relevant data. The record counts from the output of the Distill process is used for this validation. The specific tests that are executed are detailed in the PMW System Test Plan Access database.

1.8.8 Transfer the new database to the Production Server

Once the PMW database has been validated it is moved to the PMW Interactive Server (PMW2). During this time, the users may not access the current PMW database in Production. The destination server (PMW2) must have adequate drive space to house the new PMW database. The current SQL Server database will grow dynamically during the restore only until the point that it runs out of drive space. To perform the PMW database transfer, perform the following:

1. From the Build Server (PMW1), perform the sp_detach_db stored procedure
2. From the Build Server (PMW1), copy the PMW database data file (.mdf) to the appropriate drive on the Production Server (PMW2) through a mapped drive or a file transfer using PCAnywhere
3. Once the copy of the file is complete, perform the sp_attach_single_file_db stored procedure on the Production Server. This will create the new database within a few minutes
4. Make sure that the database created on the Production Server (PMW2) has a newly created log file
5. Re-attach the data file on the Build Server (PMW1) by performing the sp_attach_db stored procedure

Depending on the database size, this step can take several days to complete.

NOTE: After a database is moved to the production server, the passwords will have to be recreated. Refer to the PMW Technical Reference Guide on how to update user logins.

1.9 Exit Criteria

After the PMW System Test Plan has been executed, the PMW database is ready for release.

1.10 Forms and Subject Examples

1.11 Reference Material

The following reference manuals are used during and/or after the PMW database build process:

1. PMW Technical Reference Guide
2. Data Enhancement Functional Specifications for PMW
3. PMW System Test Plan

1.12 History

Established/Revision Date	Established/Revised By	Change Description
4/30/00	Carrie Swanson	Initial process documentation
11/14/00	Carrie Swanson	Updated the 'Transfer database to Production' procedure
9/12/01	Carrie Swanson	Added sections from Technical Guide to procedure steps.